Appl. No. 09/975,682
Amdt. dated June 1, 2006
Reply to Office Action of February 15, 2006

Remarks

The present amendment responds to the Official Action dated February 15, 2006. A

petition for a one month extension of time to respond and authorization to charge Deposit

Account No. 50-1058 the large entity extension fee of $120 accompany this amendment. The

Examiner rejected claims 1-3, 6, 8, 9, 11, and 23 under 35 U.S.C. § 102(e) based on Nordstrom

et al. U.S. Patent Application Publication No. 2001/0004383 (Nordstrom). Claims 4, 5, and 14-

17 were rejected under 35 U.S.C. § 103(a) based on Nordstrom in view of Timm et al. U.S.

Patent No. 6,055,268 (Timm). Claim 15 was rejected under 35 U.S.C. § 103(a) based on

Nordstrom. Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) based on Nordstrom in

view of Schneider et al. U. S. Patent No. 6,314,135 (Schneider). Claims 7 and 18 were objected

to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten

in independent form including all of the limitations of the base claim and any intervening claims.

These grounds of rejection are addressed below.

Claims 10 and 19-22 were previously canceled. Claims 6, 8, 12, 14-18 have been

canceled without prejudice.

Claims 1, 2, 7, 11, 13, and 23 have been amended to be more clear and distinct and new

claims 24-33 have been added. Claims 1-5, 7, 9, 11, 13, 23-33 are presently pending.

Appl. No. 09/975,682
Amdt. dated June 1, 2006
Reply to Office Action of February 15, 2006

Amendments to the Specification

The specification has been amended in the paragraph beginning at page 8, line 7 to

correct a typographical error in the subscripts of the numerator term for equation 7. The equation

$\left\{ P_{21}(f) = \dfrac{-H_{11}(f)}{H_{11}(f)} \right.$ was thereby corrected to $\left\{ P_{21}(f) = \dfrac{-H_{21}(f)}{H_{11}(f)} \right.$.

The Art Rejections

As addressed in greater detail below, Nordstrom, Timm, and Schneider do not support the

Official Action's reading of them and the rejections based thereupon should be reconsidered and

withdrawn. Further, the Applicants do not acquiesce in the analysis of Nordstrom, Timm, and

Schneider made by the Official Action and respectfully traverse the Official Action's analysis

underlying its rejections.

Nordstrom relates to a far-end cancellation circuit for a transmission system. Nordstrom

uses a precompensation matrix to precompensate transmission signals prior to transmission. The

precompensation matrix is estimated from transmissions by a least mean square method to

determine an error signal and return the error signal for use in updating the coefficients of the

precompensation matrix. Nordstrom, Abstract and paragraphs [0035], [0036], and [0037].

In contrast to Nordstrom, the present invention reduces cross-talk in a communicaiton

system. Training data signals are processed in a transmitter utilizing an initial pre-coding matrix

to produce a first pre-coded training signal. The first pre-coded training signal is transmitted to a

first communication channel. The transmitter receives from the first communication channel

matrix updating information that was computed at a receiver on the other end of the first

11

Appl. No. 09/975,682
Amdt. dated June 1, 2006
Reply to Office Action of February 15, 2006

communication channel. The matrix updating information having been computed utilizing the

transmitted first pre-coded training signal and a second pre-coding matrix located at the receiver.

The transmitter updates the initial pre-coding matrix based on the matrix updating information.

Amended claim 1 reads as follows:

Method for reducing cross-talk in a communication system comprising a plurality
of transmitters for transmitting encoded data signals via respective communications
channels to a plurality of receivers and receiving back matrix updating information, said
method comprising the steps of:
processing training data signals in a transmitter utilizing an initial pre-coding
matrix to produce a first pre-coded training signal;
transmitting said first pre-coded training signal on a first communication channel;
receiving from the first communication channel the matrix updating information
computed at a receiver on the other end of the first communication channel, the matrix
updating information having been computed utilizing the transmitted first pre-coded
training signal and a second pre-coding matrix located at the receiver; and
updating said initial pre-coding matrix based on said matrix updating information,
whereby said updating tends to offset channel impairments within said first
communication channel.

Nordstrom does not process training data signals in a transmitter utilizing an initial pre-

coding matrix to produce a first pre-coded training signal. Nordstrom does not transmit the first

pre-coded training signal to a first communication channel. Nordstrom does not receive matrix

updating information from the first communication channel. The matrix updating information

computed at a receiver on the other end of the first communication channel utilizing the

transmitted first pre-coding training signal and a second pre-coding matrix located at the receiver.

Nordstrom also does not update said initial pre-coding matrix based on said matrix updating

information. Nothing in Nordstrom teaches or makes obvious methods or an apparatus as

12

Appl. No. 09/975,682
Amdt. dated June 1, 2006
Reply to Office Action of February 15, 2006

presently claimed. The claims are not taught, are not inherent, and are not obvious in light of

Nordstrom.

Since dependent claims 2-5, 7, 9, 11, and 13 depend from and contain all the limitations

of the amended claim 1, claims 2-5, 7, 9, 11, and 13 distinguish from the reference in the same

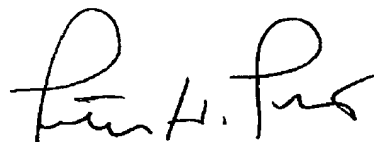manner as claim 1 and place claims 2-5, 7, 9, 11, and 13 in order for allowance.

Method claim 14 has been canceled without prejudice making the rejection moot.

Apparatus claim 23 has been amended in a similar fashion to the amendment to claim 1

placing it in order for allowance.

Conclusion

All of the presently pending claims, as amended, appearing to define over the applied

references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,

Peter H. Priest
Reg. No. 30,210
Priest & Goldstein, PLLC
5015 Southpark Drive, Suite 230
Durham, NC 27713-7736
(919) 806-1600

13